

Unit 6

Rational Expressions

Day 2

Addition & Subtraction

1)

LCD  
 $3x^2$

$$\frac{7}{x^2} + \frac{2}{x} + \frac{5}{3} =$$

$$\frac{7}{x^2} \cdot \frac{3}{3} + \frac{2}{x} \cdot \frac{3x}{3x} + \frac{5}{3} \cdot \frac{x^2}{x^2} =$$

$$\frac{21}{3x^2} + \frac{6x}{3x^2} + \frac{5x^2}{3x^2} = \frac{5x^2 + 6x + 21}{3x^2}$$

2)

$$LCD = (x+2)(x-2)(x+5)$$

$$\begin{aligned}\frac{x}{x^2-4} + \frac{2}{x^2+7x+10} &= \frac{x}{(x-2)(x+2)} \cdot \frac{x+5}{x+5} + \frac{2}{(x+5)(x+2)} \cdot \frac{x-2}{x-2} \\ &= \frac{x^2+5x}{(x-2)(x+2)(x+5)} + \frac{2x-4}{(x-2)(x+2)(x+5)} \\ &= \frac{x^2+7x-4}{(x-2)(x+2)(x+5)}\end{aligned}$$

3)

$$\begin{aligned}
 \frac{y+2}{y^2-y} + \frac{-3y}{2y^2-4y+2} &= \frac{y+2}{y(y-1)} + \frac{-3y}{2(y-1)^2} \quad \text{GCF} = 2y(y-1)^2 \\
 &= \frac{2y^2+2y-4}{2y(y-1)^2} + \frac{-3y^2}{2y(y-1)^2} \\
 &= \frac{-y^2+2y-4}{2y(y-1)^2} = \frac{-(y^2-2y+4)}{2y(y-1)^2}
 \end{aligned}$$

4)

$$\frac{x+2}{x^2-9} + \frac{4}{x-3} + \frac{-3x}{x^2-2x-3} =$$

$$LCD = (x-3)(x+1)(x+3)$$

$$\frac{(x+2)(x+1)}{(x-3)(x+3)(x+1)} + \frac{4(x^2+4x+3)}{(x-3)(x+1)(x+3)} + \frac{-3x}{(x-3)(x+1)} \cdot \frac{(x+3)}{(x+3)}$$

$$\frac{x^2+3x+2}{(x-3)(x+3)(x+1)} + \frac{4x^2+16x+12}{(x-3)(x+1)(x+3)} + \frac{-3x^2-9x}{(x-3)(x+1)(x+3)} =$$

$$\frac{2x^2+10x+14}{(x-3)(x+3)(x+1)} = \frac{2(x^2+5x+7)}{(x-3)(x+3)(x+1)}$$

HOMEWORK:

UNIT 6 DAY 2  
WORKSHEET #1  
2-28 (EVEN)